

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A method of embedding watermarking data in an audio signal, comprising the steps of:

(a) incorporating watermarking information into said audio signal, ~~wherein said watermarking information includes a robust watermark layer and a fragile watermark layer~~ to form a watermarked audio signal,

(b) sectioning said watermarked audio signal into at least two sections each section having audio content,

(c) marking at least one of said sections whereby said sections may be identified,

(d) generating distortion in a first one of said sections of said signal in a manner recoverable by a key obtainable from at least one other section having audio content, ~~wherein said key is embedded in the at least one other section through said fragile watermark layer~~, and

(e) appending said distorted section to said at least one other section to form a composite signal comprising a distorted section and at least one undistorted section.

2. (Cancelled)

3. (Currently Amended) A method as claimed in claim [[2]] 1 wherein said distortion is generated by creating a pseudo-random number sequence for adding as pseudo-random noise to said first section, and wherein said pseudo-random number sequence is embedded in said at least one other section to enable said random noise to be subsequently removed.

4. (Currently Amended) A method as claimed in claim [[2]] 1 wherein the first section is distorted by means of a scrambling function.

5. (Previously Presented) A method as claimed in claim 1 wherein said key is obtained directly from a sequence of bits contained in said at least one other section.

6. (Currently Amended) A method as claimed in claim 5 wherein said key is obtained by applying a hashing function to the bit sequence of said audio content of said at least one other section.

7. (Previously Presented) A method as claimed in claim 6 wherein the output of the hashing function is added to the bitstream of said first section to create said distortion.

8. (Previously Presented) A method as claimed in claim 5 wherein a bitstream of said first section is subject to a scrambling function to create said distortion.

9. (Original) A method as claimed in claim 1 wherein said first section comprises a section to which access is to be restricted.

10. (Original) A method as claimed in claim 1 wherein said at least one other section comprises an advertisement.

11. (Original) A method as claimed in claim 1 wherein said at least one other section comprises a trial listening section.

12. (Original) A method as claimed in claim 1 wherein said at least one other section comprises an advertisement section and a trial listening section.

13. (Original) A method as claimed in claim 1 wherein said audio signal is compressed after watermarking.

14. (Original) A method as claimed in claim 13 wherein said first section of said compressed signal is distorted by means of a scrambling function that receives as a key the output of a hashing function that acts upon said at least one other section.

15. (Original) A method as claimed in claim 14 wherein said audio signal is compressed in MP3 format and said scrambling function acts upon the bits contained within MP3 frames.

16. (Original) A method of playing back an audio signal having data embedded within it by the method of claim 1, comprising;

- (a) reading said composite signal,
- (b) identifying said sections,
- (c) obtaining said key from said at least one undistorted section, and
- (d) recovering said distorted section.

17. (Original) A method as claimed in claim 16 wherein said distorted section is recovered in real time without being written to memory.

18. (Currently Amended) A watermarked audio signal stored in a memory on a computer readable medium comprising at least two sections each having audio content, including a first section which is distorted in a manner recoverable by means of a key obtainable from audio content in at least one other section ~~having audio content, wherein said watermarked signal includes a robust watermarking layer and a fragile watermarking layer and, wherein said key is embedded in said at least one other section through said fragile watermarking layer.~~

19. (Original) A watermarked audio signal as claimed in claim 18 wherein said first section is a section to which access is restricted.

20. (Original) A watermarked audio signal as claimed in claim 18 wherein said at least one other section is an advertisement section.

21. (Previously Presented) A watermarked audio signal as claimed in claim 18 wherein said at least one other section comprises a trial listening section.

22. (Previously Presented) A watermarked audio signal as claimed in claim 18 wherein said at least one other section comprises an advertisement section and a trial listening section.

23. (Currently Amended) An apparatus for embedding watermarking data in an audio signal, comprising:

(a) means for incorporating watermarking information into said audio signal to form a watermarked audio signal, ~~wherein the watermarking information includes both robust and fragile watermarking layers,~~

(b) means for sectioning said watermarked audio signal into at least two sections each having audio content,

(c) means for marking at least one of said sections whereby said sections may be identified,

(d) means for generating distortion in one of said sections of said signal in a manner recoverable by a key obtainable from at least one other section having audio content, ~~wherein the key is embedded in the at least one other section through the fragile watermarking layer,~~ and

(e) means for appending said distorted section to said at least one other section to form a composite signal comprising a distorted section and at least one undistorted section.

24. (Original) Apparatus for the playing back an audio signal having data embedded within it by the method of claim 1, comprising;

- (a) means for reading said composite signal,
 - (b) means for identifying said sections,
 - (c) means for obtaining said key from said at least one undistorted section,
- and
- (d) means for recovering said distorted section.

25. (Currently Amended) A method for including an advertisement with audio data in an audio signal comprising, providing or creating an audio signal comprising sectioning said signal into a first section having audio content and an advertisement section having audio content, generating distortion of said first section in a manner recoverable by a key obtainable from said advertisement section, and appending said distorted first section to said advertisement section ~~wherein said signal includes a robust watermarking layer and a fragile watermarking layer, and wherein said key is embedded~~ obtainable from said audio content in said advertisement section ~~through the fragile watermarking layer.~~

26. (Currently Amended) A method for including a trial listening section with audio data in an audio signal comprising, sectioning said signal into a first section and a trial listening section, generating distortion of said first section in a manner recoverable by a key obtainable from said trial listening section, and appending said distorted first section to said trial listening section, ~~wherein said~~

~~signal includes a robust watermarking layer and a fragile watermarking layer,~~
 wherein the key is embedded obtainable from said audio content in said
advertisement section.

27. (Currently Amended) A method for including an advertisement section and a trial listening section with audio data in an audio signal, including sectioning said signal into a first section, an advertisement section and a trial listening section, marking at least one of said sections whereby said sections may be identified, generating distortion in said first section in a manner recoverable by a key obtainable from at least one of said advertisement and trial listening sections, and appending said distorted first section to said advertisement and trial listening sections to form a composite signal, wherein said key is obtainable from said audio content in signal ~~includes a robust watermarking layer and a fragile watermarking layer, and wherein the key is embedded in the at least one of said advertisement section and trial listening sections through the fragile watermarking layer.~~

28. (Currently Amended) A method of restricting access to a part of a media signal, comprising the steps of:

(a) sectioning said signal into at least two sections each having media content,

(b) marking at least one of said sections whereby said sections may be identified, ~~wherein the marking step includes generating a robust marking layer and a fragile marking layer,~~

(c) generating distortion in one of said sections of said signal in a manner recoverable by a key obtainable from ~~at least one other section~~ or more sections having media content, wherein said key is ~~embedded in the at least one other section using the fragile marking layer,~~ obtainable from said media content in said one or more other sections, and

(d) appending said distorted section to said ~~at least one other~~ or more other ~~[[section]]~~ sections to form a composite signal comprising a distorted section and at least one undistorted section.

29. (New) A method of embedding watermarking data in a media content signal, comprising the steps of:

(a) incorporating watermarking information into said media content signal using a robust watermarking technique to form a watermarked media content signal,

(b) generating distortion in at least a part of said watermarked media content signal in a manner recoverable by a key, and

(c) embedding said key in at least a part of said watermarked media content signal using a fragile data hiding technique, whereby if said watermarking information is corrupted, altered or removed said embedded key is rendered unobtainable from said media content signal.

30. (New) A method according to claim 29 wherein said media content signal is an audio signal.

31. (New) A method according to claim 29 wherein said media content signal has at least two sections, said watermarking information is embedded across said at least two sections and said key is embedded across said at least two section.

32. (New) A method according to claim 31 wherein said media content signal is an audio signal.

33. (New) A watermarked media content signal stored in a memory or on a computer readable medium, comprising:

- (a) a robust watermark layer comprising watermark information,
- (b) a fragile quality control information layer comprising a key, and
- (c) a media content layer having one or more sections comprising media content, said section or at least one of said sections if there is more than one section, being distorted in a manner recoverable by use of said key in the fragile quality control information layer;

whereby if said robust watermark layer is altered, deleted or corrupted the fragile quality control information layer is rendered unreadable such that said key cannot be obtained from it.

34. (New) A watermarked media content signal according to claim 33 wherein said media content is audio content.

35. (New) A method according to claim 1 wherein said key is embedded in said audio content of said at least one other section.

36. (New) A method according to claim 2 wherein said key is embedded using a fragile data hiding technique.